

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
14 April 2005 (14.04.2005)

PCT

(10) International Publication Number
WO 2005/032383 A1

(51) International Patent Classification⁷: A61B 17/17

(21) International Application Number:
PCT/US2004/031093

(22) International Filing Date:
22 September 2004 (22.09.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10/674,036 29 September 2003 (29.09.2003) US

(71) Applicant (for all designated States except US): SDGI HOLDINGS, INC. [US/US]; 300 Delaware Avenue Suite 508, Wilmington, DE 19801 (US).

(72) Inventor; and

(75) Inventor/Applicant (for US only): JUSTIS, Jeff, R. [US/US]; 2034 West Almadale Court, Collierville, TN 38017 (US).

(74) Agents: THOMPSON, John, F. et al.; MS LC340, 710 Medtronic Parkway, Minneapolis, MN 55432 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

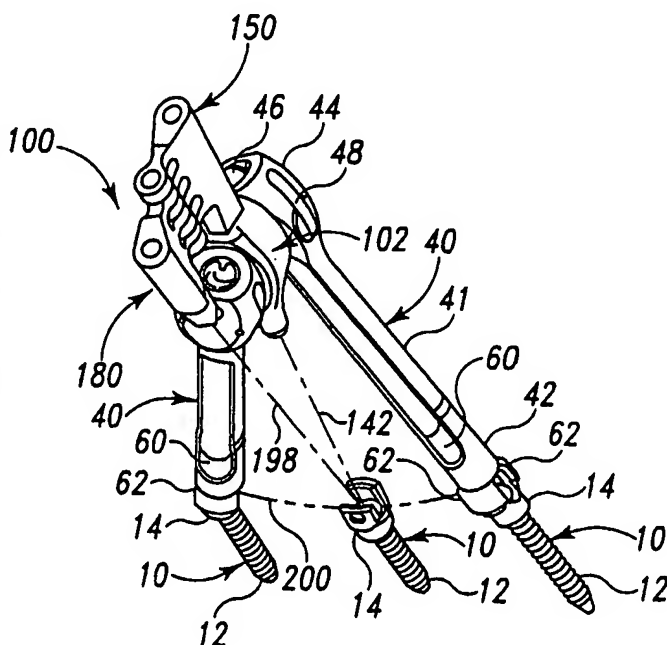
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA,

[Continued on next page]

(54) Title: GUIDE TO ALIGN BONE ANCHORS



(57) Abstract: Instruments and methods include a guide instrument (100, 220) mountable to at least one anchor extension (40) to guide the positioning of an anchor (10) in a bony segment. The guide instrument (100, 220) facilitates aligning the anchor (10) with one or more other anchors (10) already engaged to the bony segment. The anchors (10) can then be engaged with a connecting element (90) extending therebetween. The guide instrument (100, 220) facilitates multi-level fixation of bony segments with bone anchors (10) and one or more connecting elements (90) in a minimally invasive surgical approach.



MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

— as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

Internat Application No
PCT, 2004/031093

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A61B17/17

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 570 624 A (WU K.K.) 18 February 1986 (1986-02-18) the whole document	1,7,15, 17,23, 24,27, 28,33,34
X	PATENT ABSTRACTS OF JAPAN vol. 018, no. 381 (C-1226), 18 July 1994 (1994-07-18) -& JP 06 105852 A (NAGANO KEIKI SEISAKUSHO LTD), 19 April 1994 (1994-04-19) abstract; figure 2	1,7,15, 17,23, 24,27, 28,33,34
A	US 6 530 929 B1 (JUSTIS J.R. ET AL) 11 March 2003 (2003-03-11) cited in the application figures 1,4,8,21,23,24	1-6
-/--		

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

A document defining the general state of the art which is not considered to be of particular relevance

E earlier document but published on or after the international filing date

L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

O document referring to an oral disclosure, use, exhibition or other means

P document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

Z document member of the same patent family

Date of the actual completion of the international search

12 January 2005

Date of mailing of the international search report

19/01/2005

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Nice, P

INTERNATIONAL SEARCH REPORT

Interns Application No
PCT, 002004/031093

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 858 780 A (ORTHOFIX) 19 August 1998 (1998-08-19) -----	1,17,27

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2004/031093

Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 35-45
because they relate to subject matter not required to be searched by this Authority, namely:
Rule 39.1(iv) PCT - Method for treatment of the human or animal body by surgery
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Intern application No
PCT/US2004/031093

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 4570624	A	18-02-1986	NONE	
JP 06105852	A	19-04-1994	JP 3382643 B2	04-03-2003
US 6530929	B1	11-03-2003	AU 8011900 A	30-04-2001
			BR 0014936 A	18-06-2002
			CA 2387733 A1	26-04-2001
			EP 1221901 A1	17-07-2002
			JP 2003511190 T	25-03-2003
			WO 0128436 A1	26-04-2001
			US 2002161368 A1	31-10-2002
			US 2003060826 A1	27-03-2003
			US 2003229347 A1	11-12-2003
			ZA 200203097 A	18-07-2003
EP 0858780	A	19-08-1998	IT VR970011 A1	13-08-1998
			AT 225632 T	15-10-2002
			CA 2229362 A1	13-08-1998
			CN 1191104 A , B	26-08-1998
			DE 69716230 D1	14-11-2002
			DE 69716230 T2	18-06-2003
			EP 0858780 A2	19-08-1998
			ES 2184021 T3	01-04-2003
			JP 10225465 A	25-08-1998
			PT 858780 T	31-12-2002
			TR 9800223 A2	21-06-1999
			US 6102911 A	15-08-2000
			ZA 9711413 A	24-06-1998